

## **A Focus on the Scientific Contributions by Women to the Field of Physical Oceanography**

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### **LONG-TERM GOALS**

This proposed work, through its focus on the retention of women in the field of physical oceanography, will allow further capitalization on the investment the funding agencies and the universities have made on the education of women students. Essentially, this work seeks to stem the loss of intellectual capital from the physical oceanographic field.

### **OBJECTIVES**

The specific objective of this work is to plan and conduct a workshop for the express purpose of designing a mentoring program for junior women in physical oceanography. The goal is to design a mentoring program that would provide all women with access to mentors early in their scientific careers and that would provide information to both potential mentors and mentees about the importance of their involvement in this endeavor. A second objective of this work is to aid the creation of training workshops for all young physical oceanographers at the start of their research careers.

### **APPROACH**

A steering committee was primarily responsible for the plan to reach the objectives of this proposal. The steering committee members are:

Amy Bower, Woods Hole Oceanographic Institution  
Victoria Coles, Horn Point Laboratory, University of Maryland  
Rana Fine, University of Miami  
Susan Lozier, Duke University  
Julie McClean, Naval Postgraduate School  
Paola Rizzoli, Massachusetts Institute of Technology  
Lynne Talley, Scripps Institution of Oceanography, UCSD  
Luanne Thompson, University of Washington

In order to carry out the planned work, funds beyond those contained in this ONR grant needed to be procured. A successful proposal to NSF in the summer of 2005 secured sufficient funding.

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## WORK COMPLETED

An ONR and NSF-funded workshop was conducted at the Airline Center in Warrenton, Virginia from October 9-12, 2005. Twenty-nine physical oceanographers, men as well as women, assembled for the purpose of designing a mentoring program for junior women in the field of physical oceanography in order to help remove barriers, real or perceived, in their career development. Results from a survey available on the MPOWIR website ([www.mpowir.org](http://www.mpowir.org)) prior to the workshop, from 87 respondents (primarily physical oceanographers), provided key background information for the design of the community mentoring effort. In addition, workshop participants read of mentoring efforts in other disciplines; however, it was recognized that the community cannot simply adopt a program that has been developed from another discipline. A career in oceanography is unique in that it often requires sea time, there are few, if any, industry jobs, the number of geographical locations where oceanography jobs are available is limited, there are a relatively large proportional of research positions versus academic positions, and the field is relatively small (relative to computing sciences, mathematics, physics, etc.).

In order to make mentoring accessible to junior women in a wide-variety of positions and at different types of workplaces (e.g., research institutions, government labs, universities, etc.) the implementation of the mentoring program is multi-pronged. From the workshop deliberations, three main elements for a community-mentoring program emerged:

**1. Internet-based Mentoring Program:** We envision this program to be composed of four components: a) a moderated, anonymous community forum that will address issues related to the success of junior women in physical oceanography, but accessible to the entire community, b) a searchable database for mentors to be used as a resource for junior women, c) a list server with important information given to interested scientists about mentoring and funding activities, and d) a resource library on mentoring issues, data and statistics, and links to funding opportunities.

**2. The Patullo Conference:** The centerpiece of the MPOWIR proposed program, this conference is intended to provide an opportunity for junior women to talk to senior scientists about their current and planned work. The goal is for senior scientists, men and women, to provide feedback, give advice and make connections for these young women. We envision that this conference would be held annually, that it would have the format of a Gordon conference and that it would be open to all junior women in the field. The conference would also include round table discussions on career development issues, and provide a forum for the junior scientists to learn about research programs of the senior scientists as well.

**3. AGU Social on Mentoring:** It is planned that these socials will take place at all Ocean Sciences meeting, and at the AGU Fall meeting in alternate years. The goal of the socials is to facilitate connections between junior scientists and more senior scientists in the field. Talks and/or panel discussions on career and mentoring issues are also planned.

In order to implement these initiatives and to measure their success the workshop participants decided to:

1. Establish an ongoing committee that would take responsibility for the implementation of the proposed program elements.

2. Establish mechanisms to identify mentees and attract mentors.
3. Create a statistical database in order to quantify success.

## RESULTS

The primary results to date are 1) the successful completion of the workshop, 2) articles in TOS and EOS Transactions, 3) a full meeting report and 4) a plan to secure funding for the mentoring program.

Lozier, M. S., 2005. A community effort toward the retention of women in physical oceanography. *Oceanography*, **18**, 35-38.

Lozier, M. S., 2005. MPOWIR: Mentoring Physical Oceanography Women to Increase Retention. *EOS*, **87** (12), 123&126.

Lozier, M. S., A. Adcroft, L. Beal, A. Bower, D. Byrne, A. Capotondi, V. Coles, K. Lavender, C. M. Lee, J. MacKinnon, K. Shearman, L. St. Laurent, L. Thompson, and D. Witter. 2006. *MPOWIR: Mentoring physical oceanography to increase retention. Report of a workshop held October 9-12, 2005*. 32 pp. [Online] available at: <http://www.mpowir.org>.

## IMPACT/APPLICATIONS

This proposed work aids efforts to create a scientific workforce whose diversity matches that of the student population and, in a broader sense, that of the U.S. population as a whole, by aiding the retention of women in the field of physical oceanography.

## TRANSITIONS

The intent of this proposal is to design this mentoring program for the physical oceanography community essentially as a pilot project that, if successful, could be expanded to include women and minorities in all areas of ocean sciences at a later date.

## RELATED PROJECTS

The PI is in close communication with the chair of the *Committee on the Status of Women in Computing Research*, a committee with a strong record of mentoring junior women since 1991.

## REFERENCES

*Committee on the Status of Women in Computing Research*: <http://www.cra.org/Activities/craw/> .